

[0010] FIGURE 1 is a copy of a photograph of two forged parts: one made from the invention alloy (left), versus a second part made from 2014 aluminum (right). The original photograph of these parts was taken under ultraviolet light with a fluorescent dye, the speckled portions on the right forged part indicating areas of HTO defect or blistering on said part;

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[0011] FIGURE 2 is a copy of a close-up photograph of the lower portions to the two comparative forged parts shown in the same position as in FIGURE 1, with the invention alloy part on the left and 2014 forging on the right; and

[0012] FIGURES 3A and B compare side-by-side copies of two computer generated micrographs (at 500x magnification) of sections for the parts of FIGURES 1 and 2, but with the relative positions of these two parts reversed, i.e., FIGURE 3A represents the 2014 forged part and FIGURE 3B the invention alloy.

Detailed Description of Preferred Embodiments

[0013] For any description of preferred alloy compositions herein, all references to percentages are by weight percent (wt.%) unless otherwise indicated. When referring to any numerical range of values, such ranges are understood to include each and every number and/or fraction between the stated range minimum and maximum. A range of about 4-4.7 wt.% copper, for example, would expressly include all intermediate values of about 4.01%, 4.03% and 4.05% all the way up to and including 4.55%, 4.65% and 4.69% Cu. The same rule applies to every other elemental range and/or property value set forth hereinbelow.

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[0017] In order to evaluate the effect of a new alloy composition on HTO susceptibility, a comparative trial was conducted using the new alloy on a forging